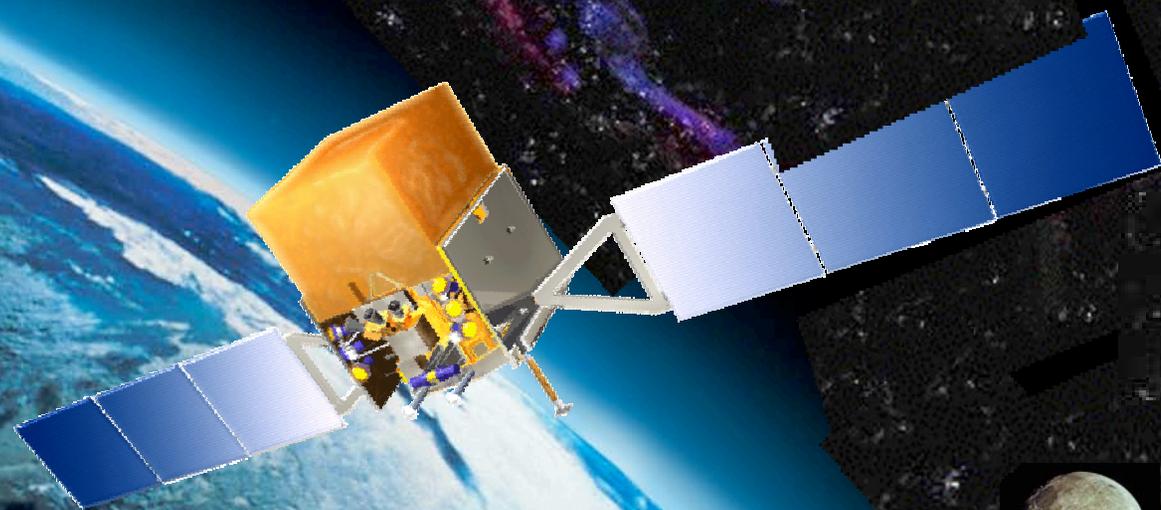




Gamma-ray Large Area Space Telescope

— LAT Status

SWG Meeting, September 2, 2005



*P. F. Michelson
L. Klaisner*





LAT Instrument Status

Status:

- *I&T proceeding smoothly; 8 flight towers installed in Grid*
- *all calorimeter modules complete*
- *ACD complete and RFI*
- *remaining Tracker construction nearly complete;*
- *DAQ electronics boxes in manufacture;*



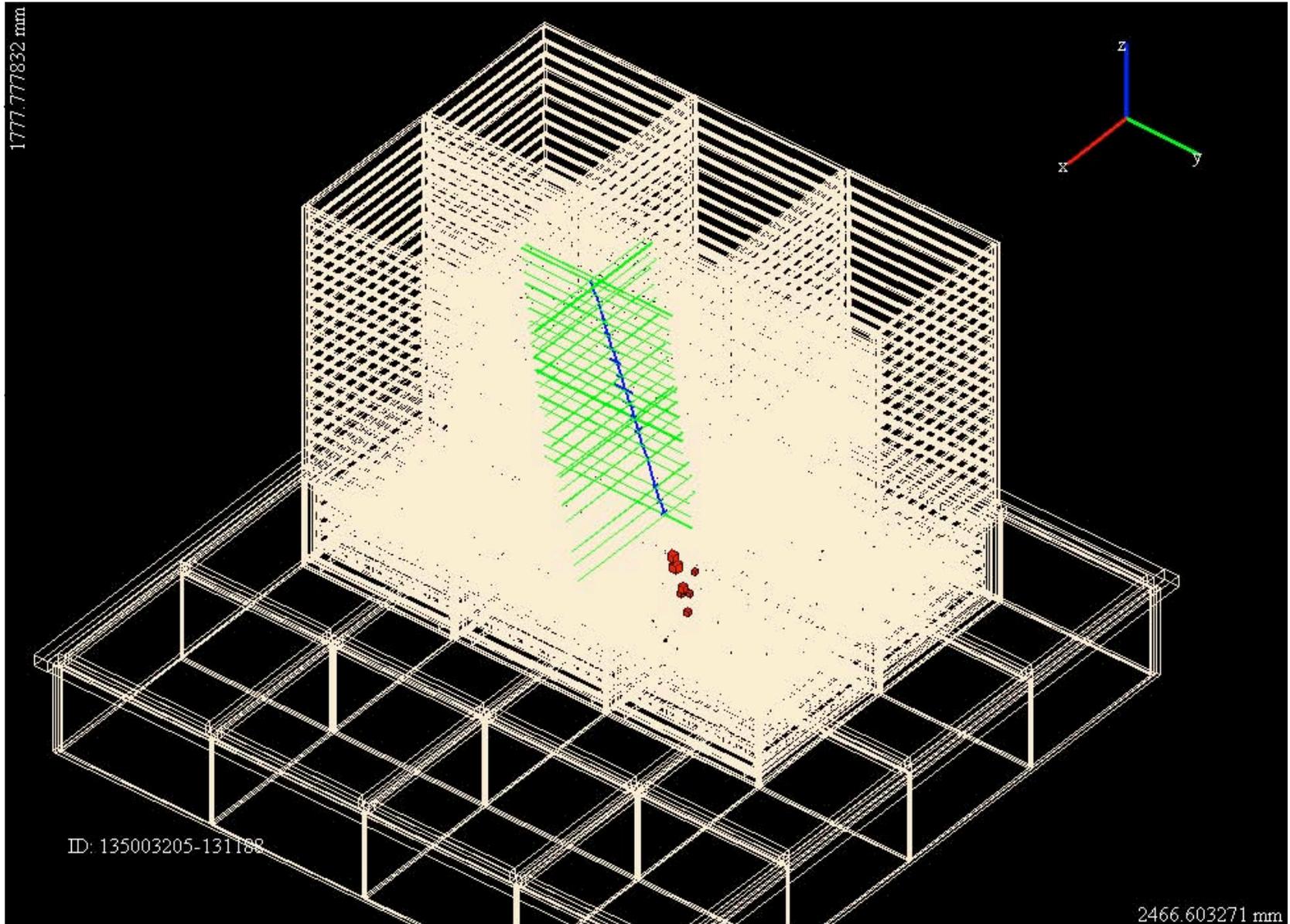
Schedule:

- *instrument assembly complete: Jan 15, 2006*
- *instrument environmental tests complete; ship to Spectrum-Astro: June 1, 2006*
- *GLAST Launch: August 31, 2007*





6 tower LAT movie





Master Schedule

- **LAT complete and tested**
January 15, 2006
 - To NRL for environmental testing
- **Delivery to Observatory Integration**
June 1, 2006
 - Mate with spacecraft and GBM and test
- **Launch** **August 31, 2007**
 - Kennedy Space Center



**Spitzer Telescope
Launch on a Delta II
Heavy**

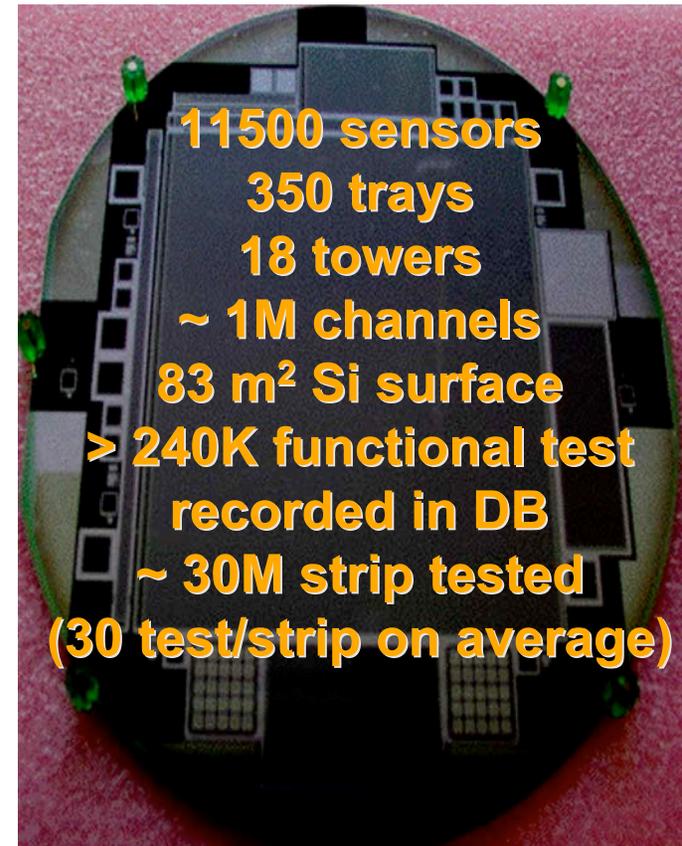
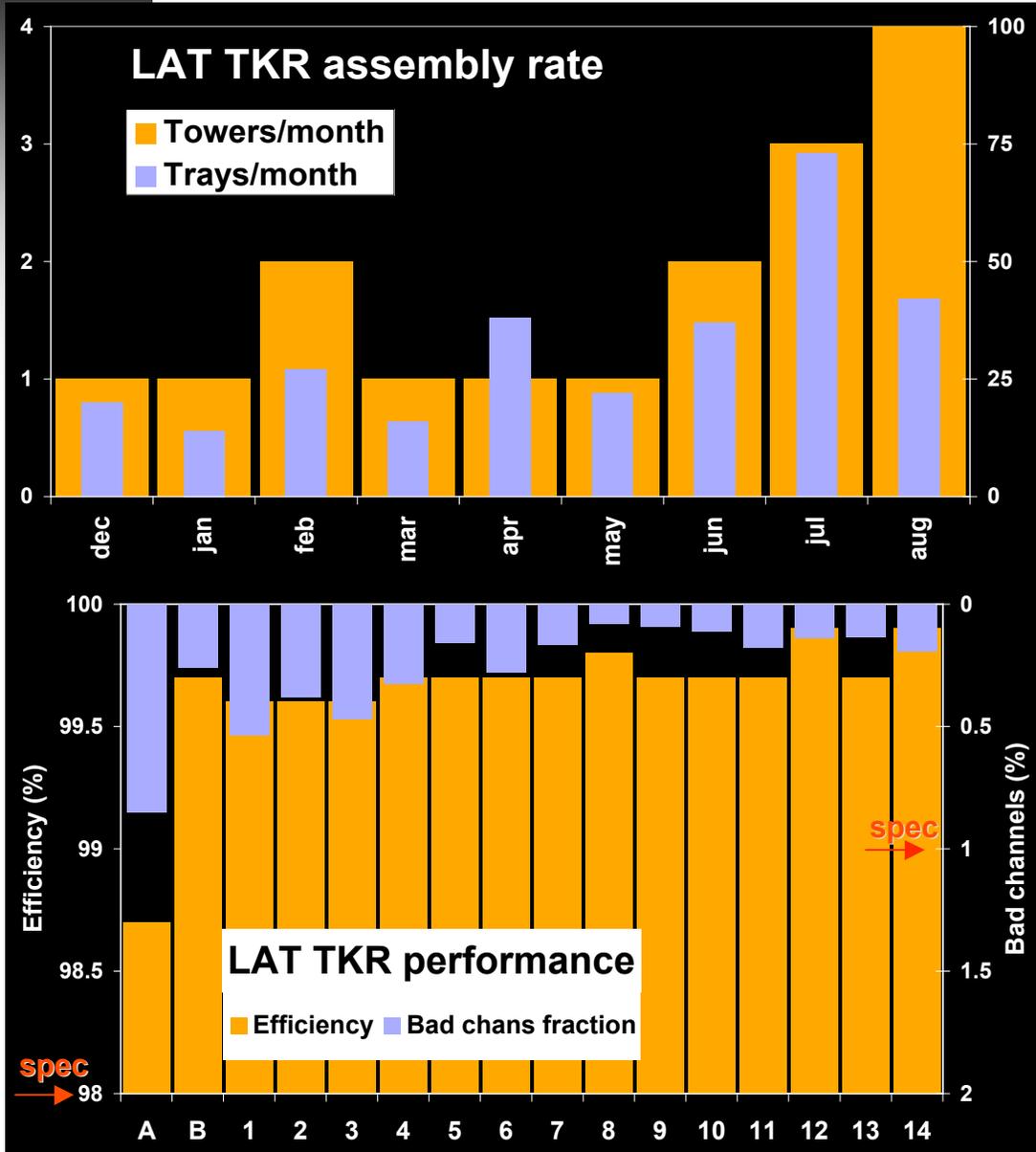


The 16th and last Tracker flight tower is done!





The LAT Silicon tracker numbers



> 60 physicist and engineers involved in the italian teams from INFN (Trieste, Udine, Padova, Pisa, Perugia, Roma2, Bari) in partnership with ASI



Calorimeter -- Complete

Completed environmental testing on last 4 CAL modules (FM 115 – FM 118) in April, 2005



Preparing CAL #18 and flight qual TEM/TPS for thermal vacuum testing



Last 4 CALs (in thermal shields) installed in "Big Blue" TVAC at NRL.



Calorimeter Deliveries to I&T Complete

- From 18 modules, all channels (3,456 log ends) meet flight specifications
 - Two modules, FM102 & FM109, will be flight spares and integrated into LAT calibration unit for beam tests.
- Delivered last 11 CALs (FM 108 – 118) to LAT I&T at SLAC in June



W. Neil Johnson, NRL

CAL Modules (in shipping containers) stacked up in clean room at SLAC

- 10 flight modules
- 1 EM module
- 1 empty container

Remaining 8 CAL modules
have been installed into LAT



Anti-Coincidence Detector Complete



ACD before installation of
Micrometeoroid Shield



ACD with Micrometeoroid Shield
and Multi-Layer Insulation (but
without Germanium Kapton outer
layer)

David J. Thompson, GSFC
Thomas E. Johnson, GSFC



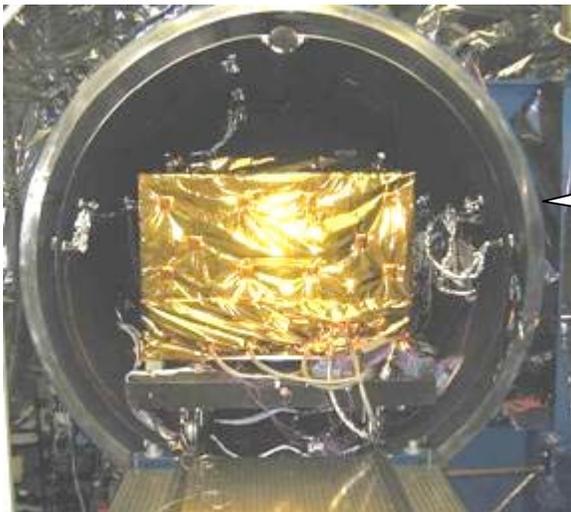
ACD Testing



ACD on Vibration Table



ACD in Acoustics Chamber



Thermal Vacuum Test



Mass properties measurement

David J. Thompson, GSFC
Thomas E. Johnson, GSFC



The LAT Instrument Comes Together

**2 Towers
on
4/11/2005**



**4 Towers
on
5/19/2005**



**6 Towers
on
6/13/2005**



**8 Towers
on
8/4/2005**



**Elliott Bloom, SLAC
Ken Fouts, SLAC**



Summary

- Anti-coincidence detector
Complete
- Calorimeter Complete
- Tracker September
- Mechanical/ Thermal
September
- Flight Software November
- Data Acquisition boxes December
- Instrument January,
2006



Summary of LAT Collaboration meeting

August 29-31, 2005

- *instrument analysis workshop held on Monday*
- *beam test plans advancing*
- *collaboration science analysis groups met*
- *Data Challenge 2: continue development and documentation of software tools*



LAT Burst Processing status

- *candidate burst processing algorithms have been developed;*
 - beginning in mid-October, we will review candidate algorithms and begin development of flight software to implement on-board LAT burst processing.
 - will deliver as part of instrument delivery in June 2006.



Year 1 data release update

- Proposed Year-1 data release plan has been presented to the GUC and the SWG, as well as the LAT Collaboration
 - release high-level data on transients and monitored sources consisting of flux (fluence) on various timescales, spectra, source position, and errors (including estimate of systematic errors) for all of these quantities; *no release in phase 1 of individual reconstructed photon events*
 - update list of monitored sources in consultation with the GUC and the SWG
- LAT collaboration will implement “quick look” analysis pipeline in support of Year 1 data release and transient analysis
 - collaboration “duty scientists” will staff 24/7



Preliminary list of monitored sources

Source type	Source name	other name	Average or min. flux ($10^{-8} \gamma \text{ cm}^{-2} \text{ s}^{-1}$)	Latitude
Sources from 3rd EGRET Catalog				
Blazar	0208-512	3EGJ0210-5055	85.5 ± 4.5	-61.9
	PKS 0528+134	3EGJ0530+1323	93.5 ± 3.6	-11.1
	0827+243	3EGJ0829+2413	24.9 ± 3.9	31.7
	Mrk 421	3EGJ1104+3809	13.9 ± 1.8	65.0
	3C 273	3EGJ1229+0210	15.4 ± 1.8	64.5
	3C 279	3EGJ1255-0549	74.2 ± 2.8	57.0
	1406-076	3EGJ1409-0745	27.4 ± 2.8	50.3
	PKS 1622-297	3EGJ1625-2955	47.4 ± 3.7	13.4
	1633+383	3EGJ1635+3813	58.4 ± 5.2	42.3



Preliminary list – cont'd

	1730-130 NRAO 530	3EGJ1733-1313	36.1 ± 3.4	10.6
	3C 454.3	3EGJ2254+1601	53.7 ± 4.0	-38.3
HMXB	LSI +61 303/ 2CG135+01	3EGJ0241+6103	69.3 ± 6.1	1.0
any source (except Crab, Vela and Geminga pulsars)			monitor if flux exceeds $2 \times 10^{-6} \text{ cm}^{-2} \text{ s}^{-1}$ and report flux down to $2 \times 10^{-7} \text{ cm}^{-2} \text{ s}^{-1}$	
After confirmed detection by LAT				
Blazar	Mrk 501			
	W Com 1219+285	3EG J1222+2841	11.5 ± 1.8	83.5
	1ES 1959+650	TeV		
	1ES 2344+514	TeV		
	H 1426+428	TeV		
	PKS 2155-304	TeV		